COMPREHENSIVE PLAN AMENDMENT

UTILITY-SCALE SOLAR ENERGY FARM

BACKGROUND:

Utility-Scale Solar Energy in the United States can trace its origins back to 1954 when Photovoltaic (PV) technology is born. Daryl Chapin, Calvin Fuller, and Gerald Pearson develop the silicon photovoltaic (PV) cell at Bell Labs (California)—the first solar cell capable of converting enough of the sun's energy into power to run everyday electrical equipment. Some would push this early history back to the late 1800's, however, the genesis of the modern photovoltaic (PV) process is credited to these three gentlemen. From this point in 1954, the technology changed and grew until 1982 when the first photovoltaic megawatt-scale power station goes on-line in Hisperia, California. It has a 1-megawatt capacity system, developed by ARCO Solar. As we have all witnessed, the next nearly 40 years of growth and development have brought us to where we are today.

> *A forward-looking Energy Plan will promote the transition to a more flexible, resilient, affordable, and environmentally responsible energy system.*
>
> *-2018 Commonwealth of Virginia Energy Plan*

Many policy-makers in throughout the nation and the world believe the future is green, sustainable, renewable energy. As detailed in the 2018 Virginia Energy Plan, Utility-Scale Solar Energy Farm deployment has grown significantly in Virginia in recent years. Between 2000, when Virginia's net metering law was enacted and the end of 2009, Virginia had less than one megawatt of net metered renewable energy installed in the Commonwealth. Today, things have greatly changed. As part of the charge towards renewable energy, the Virginia Department of Environmental Quality (DEQ), legislature was passed to allow DEQ to issue permits for renewable energy projects with a generation capacity of up to 150 MW under Virginia's "Permit by Rule" (PBR) statute. To date (2019), DEQ has issued 36 permits for solar projects and one wind power project totaling 1,272 MW, with an additional 58 Notices of Intent to apply in the PBR queue totaling 3,317 megawatts.7 In addition to the state permitting process, PJM Interconnection lists 116 Virginia solar projects in their own New Services Queue totaling over 10 gigawatts. PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

While the majority of this growth is projected to be utility scale solar, the nearly vertical growth of distributed solar from 5.7 MW in 2014 to 50.5 MW in 2018 – over 196% growth per year – looks likely to continue beyond the phase-out of the federal Investment Tax Credit beginning at the end of 2019. Virginia's tax credit legislation sunsets in 2024, however, it is roundly accepted that this deadline will be extended in some form.

What is driving Utility-Scale Solar in Virginia? From the Virginia Energy Plan:

> "One significant aspect of the Commonwealth's energy system transformation is that customer needs are shifting, and a number of corporate customers are requesting access to greater levels of renewable resources. Nationwide, corporate purchasers have contracted for over 13 gigawatts of new renewable energy between 2013 and August 2018, not counting onsite installations. The first project of this type in Virginia was the Amazon Solar Farm US East located in Accomack County. The power from the project serves Amazon Web Services' data center activities in Virginia. DEQ issued the permit for the 80 MW solar facility in September 2015, and this was the first project approved under the PBR process. The facility went into operation in October 2016 and generates approximately 170,000 megawatt hours (MWh) of solar power annually. Amazon subsequently followed with five additional Virginia projects that total 180 MW alternating current (AC), including four 20 MW resources and one 100 MW resource. These projects are located in Buckingham County, New Kent County, Powhatan County, Southampton County, and Sussex County."

As you have discussed previously during several of the petitions, there are tremendous tax incentives available from the federal and state government levels. These tax incentives are currently scheduled to sunset in 2024. Advances in the solar energy technology, specifically in the panels, has created a window for profitability when combined with the state/federal tax breaks and the low cost of land and/or low lease rates in rural Virginia.

CURRENT:

The 2016 Comprehensive Plan does not directly address Utility-Scale Solar Energy Farms, in fact, it is silent to the specific land use of utility-scale solar energy projects. However, on Page 39, one of the basic assumptions when considering future growth patterns states "In certain areas, new or expanded public utilities will be needed to address and/or facilitate economic development." Public utilities is a broad term used throughout the Comprehensive Plan that generally refers to either water, sewer, electricity or broadband facilities. One could surmise in today's landscape that utility-scale solar energy projects squarely fall within the "definition" of electricity, thus extending the term "public utilities" to include this land use.

This subject has been a "hot topic" for some time. The Planning Commission has discussed the topic multiple times over the past several years. In 2016, the Planning Commission heard it's first petition for the Utility-Scale Solar Energy Farm. So far, three petitions have been approved in the county for a total panel coverage of approximately 200 acres. A fourth petition is currently on hold at the Board of Supervisors level pending action by the developer (proposed 340 acres of panel coverage). The petition was denied by the Planning Commission.

PROPOSED:

At the December 11, 2019 meeting of the Planning Commission, the Commission voted unanimously to recommend the following amendment to the Comprehensive Plan to be added to Chapter 3-Growth Management:

Appomattox County endeavors to promote the development of renewable energy resources, such as properly sited utility-scale solar energy farms and wind energy facilities. The purpose of such facilities is for the generation of electricity in a clean, efficient, and renewable manner. Each facility should promote the public health, safety and general welfare of the citizens of the Appomattox County and the Commonwealth of Virginia in an environmentally friendly approach through its design, construction, and eventual decommissioning. These facilities are best sited in areas of the county zoned either A-1, Agricultural, M-1, Industrial, and IP, Planned Industrial as a conditional use within said district. In conjunction with the underlying zoning district classification, siting conformity should overlap areas designated by the Future Land Use Map as planned for commercial, industrial, and/or primary growth. Areas designated by the Future Land Use Map as rural transition, rural preservation, and/or primary conservation are considered to be undesirable for such land use regardless of the underlying zoning district classification.

Several factors to deliberate when considering siting such a facility are 1). The scope and scale of the project relative to the character of the surrounding community; 2). The proximity to other electrical power generation facilities; 3). The proximity to population centers; 4). The proximity to industry/business to be served by the facility; 5). The proximity to other public infrastructure directly impacted in Appomattox County; and 6). The impacts to Cultural and Historical Resources. These factors are not exclusive or limiting, but should be included in the overall deliberation, as part of generally accepted good zoning practices. Any siting of either a utility-scale solar energy farm or a wind energy facility should have a direct, positive impact on the citizens of Appomattox County and should be consistent with the current Commonwealth of Virginia Energy Plan, as well as, the Appomattox County Comprehensive Plan.